

UNCISPIONIDAE, A NEW POLYCHAETE FAMILY (ANNELIDA)

Karen D. Green

Abstract.—A new family of polychaetous annelids is described. This family belongs in the order Spionida, and is most closely related to the Spionidae. Members of this family have been reported from deep waters off Oregon, northeast South America, and southern California (new record). Two genera are presently known for the new family: *Uncopherusa* (reassigned) and *Uncispio* (new genus). *Uncispio hartmanae*, a new genus and species, is described.

The Bureau of Land Management (BLM) sponsored a baseline study of the Southern California Bight (contract no. AA550-CT6-40) during 1975-1978 (Fauchald and Jones 1978). From this study, several specimens of polychaetous annelids that were collected in deep water off Santa Cruz Island were determined by the author to be undescribed. This material, including some well preserved and complete specimens, made it possible to establish the affinity of these worms to spioniform families. The taxonomic placement of the proposed family within the order Spionida is based on an analysis of characters used to define the spioniform families (Day 1967, Fauchald 1977, Hartman 1969).

Examination of the literature revealed two reports (Hartman 1965, Fauchald and Hancock 1981) of polychaetes that belong within the proposed family. This material is reassigned and compared to the new genus and species described here.

Material examined and type-specimens described in this paper are in the collections of the Allan Hancock Foundation (AHF), University of Southern California, Los Angeles, California.

Uncispionidae, new family

Diagnosis.—Small, slender polychaetes with palps inserted dorsally at junction between pro- and peristomium (postectal prostomial margins). Occipital antenna present. Parapodia biramous with reduced and simple lobes. Branchiae may be present on a few antero-median segments, fused to notopodial lobes. Setae simple and include capillaries (smooth or haired) and hooded bidentate hooks. Capillaries long on first setiger, reminiscent of a cephalic cage; hooks become enlarged and modified on a few posterior segments. Anus terminal, surrounded by four digitate lobes.

Etymology.—The family name derives from the enlarged modified hooks (Latin "uncus" meaning hook) and affinity with the family Spionidae.

Remarks.—Uncispionids belong to the order Spionida Grube, 1850 and suborder Spioniformia because of the presence of a pair of grooved palps at the postectal margins of the prostomium. A differential diagnosis (based on a suite of characters) of each family within this suborder is presented in Table 1. Uncispionids share characters with poecilochaetids and trochochaetids (long capillaries may be present on first setiger, haired setae may be present), heterospionids

Table 1.—Character diagnosis of families within the order Spionida.

	Apistobranchiidae	Heterospionidae	Mageloniidae	Poecilochaetidae	Spionidae	Trochochaetidae	Uncispionidae
Body form	anterior end inflated, rest of body cylindrical	short thoracic region, prolonged abdominal setigers	long, slender	long, slender	elongated	flattened, cylindrical	slender
Shape of prostomium	base rounded; ending in a rounded point	blunt	shovel-like	small, rounded	variable	flattened ridge	bluntly rounded
Palp insertion	dorsal postectal margins	dorsal postectal margins	ventral junction of pro- and peristomium	dorsal postectal margins	dorsal postectal margins	dorsal postectal margins	dorsal postectal margins
Prostomial appendages	none	none	none	frontal or median antenna	occipital antenna may be present	none	occipital antenna
Branchiae	start setiger 2	thoracic setigers	absent	absent	variable	absent	may be present on antero-median setigers
Parapodia	biramous	biramous	biramous	biramous	biramous	biramous anterior and posterior; uniramous median	biramous
Parapodial lobes	cirriform, serrated postsetal lobes in some setigers	reduced	digitate lobes anteriorly; abdominal region with foliose lobes	spindle or bottle shaped	cirriform or foliose	postsetal lobes serrate anteriorly otherwise digitate	reduced

Table 1.—Continued.

	Apistobranchidae	Heterospionidae	Mageloniidae	Poecilochaetidae	Spionidae	Trochochaetidae	Uncispionidae
Setae	simple capillaries	simple capillaries form nearly complete cinctures around abdomen; some neurosetal falcate spines	limbate capillaries; hooded hooks	smooth, pectinate, and plumose capillaries; acicular spines; long capillaries may be present on 1st setiger	simple capillaries; hooded hooks; modified spines sometimes present	simple and fringed capillaries; falcate, smooth, and plumose (tips) acicular spines; long capillaries on 1st setiger	smooth or haired capillaries; hooded hooks, some modified; long capillaries on 1st setiger
Pygidium	anal cirri present	undescribed	anus dorsal usually with 2 lateral cirri	anus terminal, bounded by clavate processes	variable	terminal anal pore surrounded by crenulate margin	anus terminal bounded by pair of dorsal and ventral lobes

Sources: Day 1967; Fauchald 1977; Hartman 1969.



Fig. 1. *Uncispio hartmanae*, holotype: a, Dorsal view, prostomium and first 2 setigers; b, Paratype, dorsal view of head showing palp; c, Ventral view of anterior end; d, Dorsal view, pygidium and last 3 setigers.

(reduced parapodial lobes, branchiae on thoracic setigers), but are most closely related to spionids (hooded bidentate hooks, occipital antenna, branchiae). When considered together, the presence of reduced parapodial lobes, haired setae (when present), long capillaries on the first setiger, and modified hooded hooks precludes placement of these worms into any previously described family.

Table 2.—Key characters of type-material of *Uncispio hartmanae*.

Character	Holotype	Paratype	Paratype
Length × width	4.2 × 0.25 mm	4.8 × 0.25 mm	3.2 × 0.2 mm
Total number of setigers	39	37	31
Presence of branchiae; setigers	6–11	6–8	5–8
Presence of hirsute notosetae; setigers	15–31	9–31	11–23
Absence of notosetae; setigers	38–39	36–37	30–31
Presence of hooded neurohooks; setigers	9–39	9–37	8–31
Presence of modified neurohooks; setigers	38–39	36–37	30–31
Pygidial lobes	4 + cirrus	4	4
Palps	absent	absent	present

In addition to the Santa Cruz Island specimens, members of this family have been reported from deep waters (2860 m) off Oregon (as *Uncopherusa bifida* by Fauchald and Hancock 1981) and northeast South America at a depth of 1500 m (as ? *Spionida* by Hartman 1965).

Uncispio, new genus

Type-species.—*Uncispio hartmanae*, new species.

Diagnosis.—Body cylindrical with 3 distinct regions. Anterior setigers with capillaries in noto- and neuropodia; first setiger with long bilimbate setae, other setigers with short limbate setae with one edge finely haired. Median setigers have in addition to short haired capillaries, long hirsute capillaries in notopodia and bidentate hooded hooks in neuropodia. Posterior setigers without long hirsute capillaries in notopodia; last 2 setigers with only neurosetae, hooded hooks enlarged and modified.

Remarks.—*Uncispio* is related to *Uncopherusa* Fauchald and Hancock, 1981 and ? *Spionida* Hartman, 1965. *Uncispio* is differentiated from *Uncopherusa* by the presence of haired notosetae (*Uncopherusa* lacks haired setae), and fewer posterior setigers with modified hooded hooks (*Uncopherusa* has 5 setigers with modified hooks). *Uncopherusa* was described as having the body partly covered with papillae and encrusted with sand; it is suggested that this refers instead to a description of the worm's tube. Hartman's specimen is recognized as belonging to this family because of the presence of a similar pygidium and posterior modified hooks. However, because the specimen is a fragment further taxonomic placement is impossible.

Uncispio hartmanae, new species

Figs. 1, 2; Table 2

Material.—Holotype, AHF Poly 1365; paratypes, AHF Poly 1366; offshore Santa Cruz Island, station 80901, 222 m, light brown hard clay with pebbles, winter sample.

Description.—Holotype complete with 39 setigers, 4.2 mm in length, 0.25 mm in width. Body lacking pigmentation in alcohol. Body cylindrical, segments more elongate and less distinct in median than anterior and posterior regions of body. Paratypes compared with holotype in Table 2.

Prostomium anteriorly bluntly rounded with posterior occipital antenna; eyes

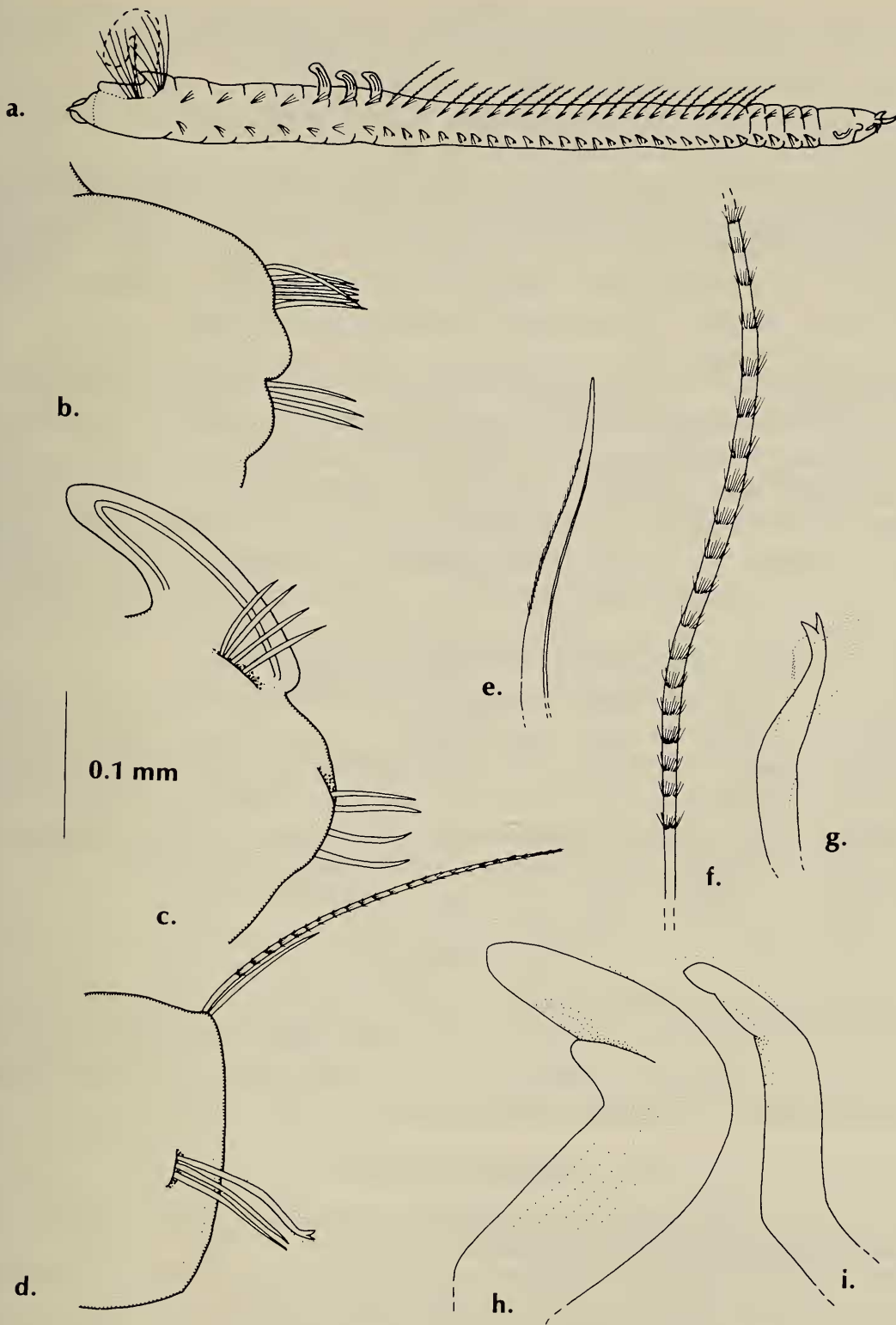


Fig. 2. *Uncispio hartmanae*, paratype: a, Lateral view, diagrammatic representation of entire worm showing 3 body regions; b, Lateral view, fourth setiger; c, Lateral view, sixth setiger with branchia; d, Lateral view, ca. setiger 31; e-f, Short limbate and hirsute capillaries, twelfth setiger (ca. 500 \times); g-i, Hooded hooks, setigers 25, 36 and 37, respectively (ca. 500 \times).

absent (Fig. 1a). Peristomium forming lateral wings on either side of prostomium. Palps missing on holotype, one palp present on paratype. Palps grooved and short, inserted dorsally at junction between pro- and peristomium lateral to the occipital antenna (Fig. 1b). Proboscis an axial sac with what appears to be 2 distal

digitate lobes. However, because proboscis is not completely everted, and the worm is small, it is difficult to distinguish if these lobes are actually part of the proboscis or subdistal antennae (Figs. 1a, b, c).

Anus terminal, surrounded by 4 primary digitate lobes, pair ventral and dorsal; holotype with one additional smaller cirrus (Fig. 1d).

Parapodia biramous with reduced rounded lobes. All setae simple, include capillaries and hooded bidentate hooks. Setae distinct in anterior, median and posterior regions of body (Fig. 2a). First setiger with very long bilimbate capillaries in noto- and neuropodia; setae splayed, surround peristomium, reminiscent of cephalic cage. Setigers 2–8 with short limbate (with one edge finely haired) capillaries, approximately 6 per fascicle, both in noto- and neuropodium (Figs. 2b, c, e). Branchiae fused to notopodial lobes (Fig. 2c), present on setigers 6–11.

Noto- and neurosetae of median segments include in addition to short haired capillaries, long whip-like hirsute capillaries in notopodium (1 hirsute and 1–2 short capillaries per fascicle), and hooded bidentate hooks in neuropodium (2 capillaries and 1–3 hooks per fascicle) (Figs. 2d, f, g). Hirsute capillaries are present in setigers 15–31. However, presence of hirsute capillaries coincident with presence of hooded hooks in paratype may indicate that these setae were missing from more anterior setigers on the holotype. Hooded hooks are present in the neuropodium of setiger 9 and continue to end of worm.

Notosetae of posterior setigers (setigers 32–39) with only short haired capillaries, similar to anterior setigers (2 per fascicle). Last 2 setigers (38–39) lack notosetae; neurohooks enlarged and modified (penultimate hook largest), remnant of hood present (Figs. 2h, i).

Etymology.—The species is named in honor of the late Dr. Olga Hartman who first discovered this family and recognized its affinity to spionids.

Distribution.—Offshore Santa Cruz Island, California, 222 m.

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